

**Amendments to the Specification**

Please replace the paragraph beginning at page 16, line 5, with the following rewritten paragraph:

Early traffic regulator module ~~222~~ 228 is used to send early traffic regulation (ETR) signals, e.g., messages, to upstream nodes to trigger the congestion control and forced packet flow reductions techniques of the present invention to be implemented in the upstream node. In the case of a node receiving an ETR message, the ETR module 228 is responsible for responding to the ETR message by implementing forced packet flow rate reductions. In some embodiments the forced packet flow rate reductions in response to an ETR message are on flows directed to the node which was the source of the ETR message while in other embodiments, the forced packet flow rate reductions are limited to flows destined for target IP address(es) identified in the received ETR message.

Please replace the paragraph beginning at page 27, line 7, with the following rewritten paragraph:

Processing of non-responsive flows proceeds from step 512 to step 520 wherein the non-responsive flows are blocked. The processing of the received packets corresponding to a non-responsive flow then stops in step ~~528~~ 530.

Please replace the paragraph beginning at page 28, line 18, with the following rewritten paragraph:

In step ~~526~~ 518, the packet forwarding rates of each aggressive flow is regulated separately as a function of the flow's determined current flow rate and the corresponding baseline flow rate. Forced reduction in a flow's forwarding rate is implemented by adjusting the maximum threshold 802 of the queue 800 of a flow or flow group as shown in Figure 8. The forced flow forwarding rate reduction is achieved, in one embodiment of the invention, by dropping the required number of received packets from the aggressive flows packet forwarding queue. The drop rate, e.g., penalization severity, for each aggressive flow is affected by the packet arrival rate of the flow. The higher the packet arrival rate of the flow above the baseline flow rate, the higher the applied packet drop rate will be.

Please replace the paragraph beginning at page 30, line 10, with the following rewritten paragraph:

After flow rate reduction is applied to the aggressive traffic flows, the remaining packets are forwarded in step 529. Processing of a set of received packets then stops in step 530.

Please replace the paragraph beginning at page 16, line 5, with the following rewritten paragraph:

Fig. 7 illustrates the exemplary results of applying the flow control methods of the invention to the nine flows illustrated in Fig. 6. The second from last row of Fig. 9 7 shows the flow throughputs for each of the nine flows after AFFC processing. Notice that if the congestion still continues, the AFFC flow regulation will continue with the penalty ratio  $k$  on flow forwarding rates--  $\lambda(t) = \frac{\lambda(t - \Delta t)}{k}$ .